

AMENDMENTS TO THE CLAIMS

Please amend the claims of the present application as set forth below.

In accordance with the PTO's revised amendment format, a detailed listing of all claims has been provided. A status identifier is provided for each claim in a parenthetical expression following each claim number. Changes to the claims are shown by strikethrough (for deleted matter) or underlining (for added matter).

Claim History Summary:

- 10        Claim 1 was originally filed.  
          Claim 1 was rejected (OA 04/07/04).  
          Claim 1 was amended and claims 2-10 were added.  
          Claims 1-10 were rejected (Final OA 11/01/04).  
          Claims 1-10 were amended and new claims 11-14 added and a RCE  
15        submitted.  
          Claims 6, 7 and 10 were objected as being dependent on a rejected  
          base claim but otherwise allowable and claims 1-5, 8-9 and 11-14 were rejected  
          (OA 03/31/05).

20        Claim Summary of Present Response:

- Claims 1 and 8 are currently amended.  
          Claims 6 and 10 are canceled.  
          Claims 15-20 are new.  
          Claims 1-5, 7-9 and 11-20 are pending.

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Detailed Listing of All Claims 1-20:

Claim 1 (Currently amended). A heat exchanger comprising:

a core member including:

5 a plurality of hot-side fluid or gas transport passages for accommodating  
passage of a first fluid or gas therein;

a plurality of cold-side fluid or gas transport passages for  
accommodating passage of a second fluid or gas therein that is provided at a  
temperature less than that of the first fluid or gas, the hot-side and cold-side  
fluid or gas transport passages being in contact with one another to permit  
10 conductive heat transfer;

a hot-side manifold and a cold-side manifold to direct and receive the  
first and second fluids or gases into and from the respective hot-side and cold-  
side fluid or gas transport passages wherein the hot-side manifold comprises a  
dividing wall to divide the hot-side manifold into two unequal fluid or gas  
15 portions, wherein the smaller of the unequal fluid or gas portions receives the  
first fluid or gas from the plurality of hot-side fluid or gas transport passages and  
wherein the larger of the unequal fluid or gas portions directs the first fluid into  
the plurality of hot-side fluid or gas transport passages and wherein the cold-  
side manifold comprises a dividing wall to divide the cold-side manifold into two  
20 fluid or gas portions; and

a flow director integral to the hot-side manifold to change the flow  
direction of the first fluid or gas passing through the larger of the unequal fluid  
or gas portions.

25 Claim 2 (Previously presented). The heat exchanger of claim 1 wherein the  
hot-side manifold comprises a length and a width and wherein the flow director  
comprises at least two members to direct the fluid or gas substantially  
lengthwise in the larger of the unequal fluid or gas portions of the hot-side  
manifold.

Claim 3 (Previously presented). The heat exchanger of claim 2 wherein the at least two members comprise bars that act to reduce localized stress concentrations of the hot-side manifold proximate to an inlet.

- 5 Claim 4 (Previously presented). The heat exchanger of claim 1 wherein the flow director is integral to the hot-side manifold via welding.

Claim 5 (Previously presented). The heat exchanger of claim 1 wherein the hot-side manifold comprises an inlet to receive the first fluid or gas into the heat  
10 exchanger and an outlet that allows the first fluid or gas to exit the heat exchanger.

Claim 6 (Canceled).

- 15 Claim 7 (Previously presented). The heat exchanger of claim 1 wherein the flow director comprises one or more members that extend from the dividing wall to an opposing wall of the hot-side manifold.

Claim 8 (Currently amended). A manifold for a heat exchanger comprising:  
20 a dividing wall to divide the manifold into an inlet fluid or gas portion and a smaller, outlet fluid or gas portion;  
an inlet associated with the inlet fluid or gas portion having a centerline and a cross-sectional flow area substantially orthogonal to the centerline;  
an outlet associated with the smaller, outlet fluid or gas portion; and  
25 a flow director integral to the manifold that comprises at least two members disposed at non-orthogonal angles to the centerline of the inlet and wherein one or more of the members of the flow director extend from the dividing wall to an opposing wall of the manifold.

Claim 9 (Previously presented). The manifold of claim 8 wherein the at least two members comprise bars that act to reduce localized stress concentrations of the manifold proximate to the inlet.

5 Claim 10 (Canceled).

Claim 11 (Previously presented). The manifold of claim 8 wherein the inlet comprises an inlet for gas and the outlet comprises an outlet for the gas.

10 Claim 12 (Previously presented). The manifold of claim 11 wherein the gas enters the inlet at a high temperature and wherein the gas exits the outlet at a lower temperature.

15 Claim 13 (Previously presented). The manifold of claim 11 wherein the gas enters the inlet at a low density and wherein the gas exits the outlet at a higher density.

20 Claim 14 (Previously presented). The manifold of claim 8 wherein the outlet comprises a cross-sectional flow area and wherein the cross-sectional flow area of the inlet exceeds the cross-sectional flow area of the outlet.

Claim 15 (New). A heat exchanger comprising:  
a core member including:  
a plurality of hot-side fluid or gas transport passages for accommodating  
25 passage of a first fluid or gas therein;  
a plurality of cold-side fluid or gas transport passages for  
accommodating passage of a second fluid or gas therein that is provided at a  
temperature less than that of the first fluid or gas, the hot-side and cold-side  
fluid or gas transport passages being in contact with one another to permit  
30 conductive heat transfer;

a hot-side manifold and a cold-side manifold to direct and receive the first and second fluids or gases into and from the respective hot-side and cold-side fluid or gas transport passages wherein the hot-side manifold comprises a dividing wall to divide the hot-side manifold into two unequal fluid or gas

5 portions, wherein the smaller of the unequal fluid or gas portions receives the first fluid or gas from the plurality of hot-side fluid or gas transport passages and wherein the larger of the unequal fluid or gas portions directs the first fluid into the plurality of hot-side fluid or gas transport passages; and

a flow director integral to the hot-side manifold to change the flow  
10 direction of the first fluid or gas passing through the larger of the unequal fluid or gas portions wherein the flow director comprises one or more members that extend from the dividing wall to an opposing wall of the hot-side manifold.

Claim 16 (New). The heat exchanger of claim 15 wherein the hot-side  
15 manifold comprises a length and a width and wherein the flow director comprises at least two members to direct the fluid or gas substantially lengthwise in the larger of the unequal fluid or gas portions of the hot-side manifold.

20 Claim 17 (New). The heat exchanger of claim 16 wherein the at least two members comprise bars that act to reduce localized stress concentrations of the hot-side manifold proximate to an inlet.

Claim 18 (New). The heat exchanger of claim 15 wherein the flow director is  
25 integral to the hot-side manifold via welding.

Claim 19 (New). The heat exchanger of claim 15 wherein the hot-side manifold comprises an inlet to receive the first fluid or gas into the heat exchanger and an outlet that allows the first fluid or gas to exit the heat  
30 exchanger.

Claim 20 (New). The heat exchanger of claim 15 wherein the cold-side manifold comprises a dividing wall to divide the cold-side manifold into two fluid or gas portions.